Abstract

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Title of Diploma Thesis: On-line coupling of MEPS with HPLC for determination of pharmaceuticals in urine

A new method for on-line coupling of MEPS with HPLC was developed and validated for analysis of metoprolol, propranolol and labetalol in the urine. The column Triart YMC 50 mm x 4.6 mm – 5 µm particle size was used for separation of three β - blockers - metoprolol, labetalol and propranolol. Detection was carried out using a fluorescence detector at excitation wavelength 220 nm and emission wavelength 315 nm and the column temperature was set on 30 °C. Gradient elution with a mobile phase of 0,5% aqueous solution of triethylamine adjusted to pH 4.5 with glacial acetic acid with acetonitrile in ratio 80/20 at a flow rate of 1.0 ml/min was used for separation. Before the analysis, the β – blockers were extracted and preconcentrated from urine matrix with using microextraction to on MEPS column C – 18 SGE Analytical Science using 7% acetonitrile as a washing solution and the washing flow rate of 0.5 ml/min.

Original method allows the determination of the three selected β – blockers in the urine matrix without previous sample preparation.

Keywords: HPLC, MEPS, metoprolol, labetalol, propranolol, urine